CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2007-0039

AMENDMENT OF WASTE DISCHARGE REQUIREMENTS (ORDER NO. 95-130) FOR:

CITY OF BURLINGAME, BURLINGAME LANDFILL

for the property located at

1001 AIRPORT BOULEVARD
BURLINGAME, CA 94010
SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Board), finds that:

SITE OWNER AND LOCATION

1. The City of Burlingame (referred to herein as the Discharger) owns the closed Burlingame Landfill. The landfill site is located in the City of Burlingame, bounded by Airport Boulevard separating it from San Francisco Bay on the north, Doubletree Hotel on the east, and a marsh and the Burlingame Lagoon, a tributary to San Francisco Bay, on the south (Figure 1). A wastewater treatment plant and city park is located to the west of the site. The site is maintained as recreational space.

PURPOSE OF UPDATING THIS ORDER

2. The purpose of this Order is to amend the Discharger's current Waste Discharge Requirements by modifying the monitoring schedule and updating the sampling requirements of the Self Monitoring Program. This Order also reflects the change in land use of the Landfill from open space to recreational.

SITE DESCRIPTION AND HISTORY

3. The Burlingame Landfill (Site) was constructed on former tidal flats on a peninsula with San Francisco Bay to the north and Burlingame Lagoon to the south (Figure 1). Groundwater at the Site is tidally influenced. The Site is approximately 50 acres and is part of a 91-acre tract owned by the Discharger. The landfill was in operation from 1957 to 1987, and accepted inorganic construction debris, concrete rubble, wood, plastic, garden refuse, metal, and clean soil. No household garbage or hazardous wastes were accepted. Soil and refuse fill reached a maximum thickness of approximately 30 feet. The Discharger completed the final landfill cap in 2002 and constructed recreation fields on the

Site. Eight groundwater wells, two surface water stations, and two leachate wells are sampled as part of the post-closure self monitoring program (Figure 1, Tables 1, Table 2).

The post closure land-use is outlined in the Final Closure and Post-Closure Maintenance Plan (1998) and the Closure Certification Report (2005). Construction was performed between March 1995 and November 1999. The closed landfill houses a driving range, golf pro shop, putting green, soccer field and practice area, parking lot, baseball field, planting area, dog park, and maintenance road (Figure 2). These recreational facilities were designed to minimize infiltration of storm and irrigation water in order to avoid increasing leachate volumes.

The facility is divided into two areas. Each area is underlain by a cap of either low-permeability clay or geosynthetic clay liner (GCL) (permeability of $1x10^{-6}$ cm/s or less). The top deck area consists of the driving range, pro shop, putting green, parking lot, and soccer field and practice area. This area is elevated with respect to the lower deck. The clay layer or GCL on the top deck area is sloped at 3% to enhance lateral flow of storm or irrigation water. The clay is overlain by sand, and the vegetated surface is sloped to 1% for the same purpose (Figure 3). The top deck area is bounded by a surface drainage system of storm drain pipes and catch basins.

The lower deck area contains a baseball field, dog park, planting area and a maintenance road. The dog park is graded to 3%. In order to minimize the surface slope of the ball field, the clay layer was engineered in a "saw-tooth" formation with slotted subdrain pipes in the low portions of the foot high clay mounds. This layer is covered by gravel, a geosynthetic fabric and sand. This system is designed to increase the efficiency of storm and irrigation water removal with a 2% overall clay layer slope and a surface layer 0% to 2% grading (Figure 4). The subsurface drainage system in the lower deck area connects to the surface storm drains and catch basins.

WATER BOARD ORDERS

4. The Board adopted waste discharge requirements for the Site on June 21, 1995 (Order No. 95-130).

BASIS FOR AMENDMENT

5. Waste Discharge Requirements Order No. 95-130 (WDR) is being amended to eliminate obsolete requirements from the monitoring schedule, to update sampling requirements based on historic data, and to reflect changes in land use.
    a. The monitoring and reporting frequency for the Site shall be reduced from quarterly to semiannual (Tables 1 and 2). The reduction in monitoring frequency is appropriate because concentrations of all constituents of concern in Site groundwater and surface water have been consistently non-detect or below environmental screening levels for over five years and concentrations in leachate have been stable.
    b. The landfill property land use has changed from open space to recreational.

CHANGES TO THE WASTE DISCHARGE REQUIREMENTS AND MONITORING PROGRAM

6. The self monitoring program is being amended to reflect changes in the status of monitoring stations (Tables 1 and 2).
    - Leachate well GR-1 was destroyed in 1997; however a replacement well is not needed. Volatile Organic Compound (VOC) concentrations (chlorobenzene and 1,4-dichlorobenzene) in leachate well GR-3 were approximately two times as high as concentrations measured in well GR-1. Continued monitoring of leachate wells GR-3 and GR-4, in combination with historic data will provide sufficient data to characterize Site leachate.
    - Leachate line manhole GR-8 has been added to the existing sampling locations. GR-8 is a manhole into a section of the unused leachate collection pipe system and shall be monitored for fluid levels only.
    - Recreation fields have been constructed on the former landfill; therefore standard observation requirements shall be required only at surface water stations during semiannual sampling events.

7. The facility's exemplary compliance record indicates that monitoring of halogenated VOCs need only be required annually (Table 2). The Board finds that this meets the requirements for an engineered alternative under §20380(e) of Title 27, California Code of Regulations. The goal of the requirement as stated in §20420(b) is to detect a release from the unit at the earliest possible time. The engineered alternative is applicable according to §20080(c) because the Discharger has demonstrated compliance, and semi-annual monitoring of these constituents is unnecessarily burdensome.

8. The self monitoring program is being amended to reflect changes in sampling parameters (Tables 1 and 2).
    - Sampling for alkalinity, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total dissolved solids (TDS), and total suspended solids (TSS) shall be eliminated from the sampling parameters described in the self monitoring program. The Site's proximity to San Francisco Bay and the Burlingame Lagoon overwhelmingly control concentrations for these analytes. In this setting, VOCs and Total Kjehldahl Nitrogen (TKN, a measure of organic nitrogen and ammonia) are the most reliable indicators of a potential leachate release to groundwater and surface water.
    - Metals (antimony, total chromium, cobalt, copper, nickel, silver, and zinc) and chlorinated herbicides analyses were discontinued in 1997 following the Discharger's submittal of the September 1996 *Proposed Detection Monitoring Program*. Due to the low frequency of detection in leachate, these constituents were considered poor indicators of leachate release.

CEQA

9. This action is an amendment of an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15301 of the Resources Agency Guidelines.

10. The Board has notified the Discharger and interested agencies and persons of its intent to amend the Waste Discharge Requirements, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

11. The Board, in a public meeting, heard and considered all comments pertaining to this amendment of Waste Discharge Requirements.

IT IS HEREBY ORDERED, pursuant to Title 27, Division 2, Subdivision 1 of the California Water Code and Division 7 of the California Water Code, that Order No. 95-130 shall be amended as follows:

A) The compliance requirements for **Section C – Provisions, No. 5 – Discharge Monitoring Program** shall be changed from QUARTERLY reporting to SEMIANNUAL reporting.

The Discharger shall submit a Semiannual Self Monitoring Report, acceptable to the Executive Officer. The Semiannual Self Monitoring Report shall be prepared under the supervision of a registered civil engineer or professional geologist.

REPORT DUE DATE: 1ST SEMI-ANNUAL REPORT – April 30 of each year & ANNUAL REPORT
2ND SEMI-ANNUAL REPORT – October 31 of each year

B) The compliance requirements for **Part B, Section B – Groundwater, Leachate, and Surface Water Monitoring** shall be changed to reflect semiannual sampling requirements. The original (Table 1) and updated (Table 2) Discharge Monitoring Programs are attached. The Discharger shall collect samples at six month sampling intervals, as outlined in Table 2. The amended schedule shall include semiannual sampling during the first quarter (February) and third quarter (August). The annual summary report shall incorporate data from semiannual sampling events, and may be included in the semi-annual report due April 30 each year.

C) The **Self Monitoring Program, List of Analytic Parameters** shall be changed to reflect the sampling parameters and schedule outlined in Table 2. Sampling requirements for alkalinity, biochemical oxygen demand (BOD), chemical oxygen demand (COD), chlorinated herbicides, metals (antimony, chromium, cobalt, copper, nickel, silver, and zinc), total suspended solids (TSS), and total dissolved solids (TDS) have been eliminated. In addition, leachate well GR-1 has been removed from the list of wells sampled.

D) Requirements outlined in **Part B Section 1.A. – On-Site Observations** shall be changed to require standard observations at surface water stations during semiannual sampling events. Standard observations for receiving waters are defined under **Part A, C.a. Definition of Terms** of Order No. 95-130.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of and Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on May 9, 2007.

Bruce H. Wolfe
Executive Officer

Attachment: Figure 1, Site Plan Illustrating Monitoring Locations

Figure 2, Site Plan Illustrating Recreational Facilities and Approximate Waste Boundary

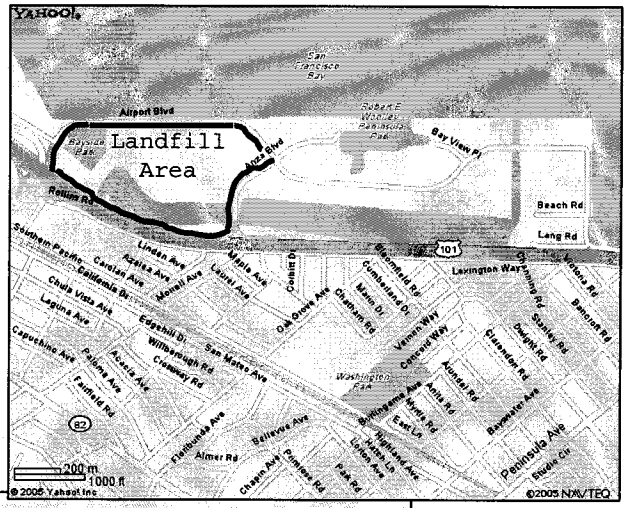
Figure 3, Cap Cross Sections for Top Deck Area

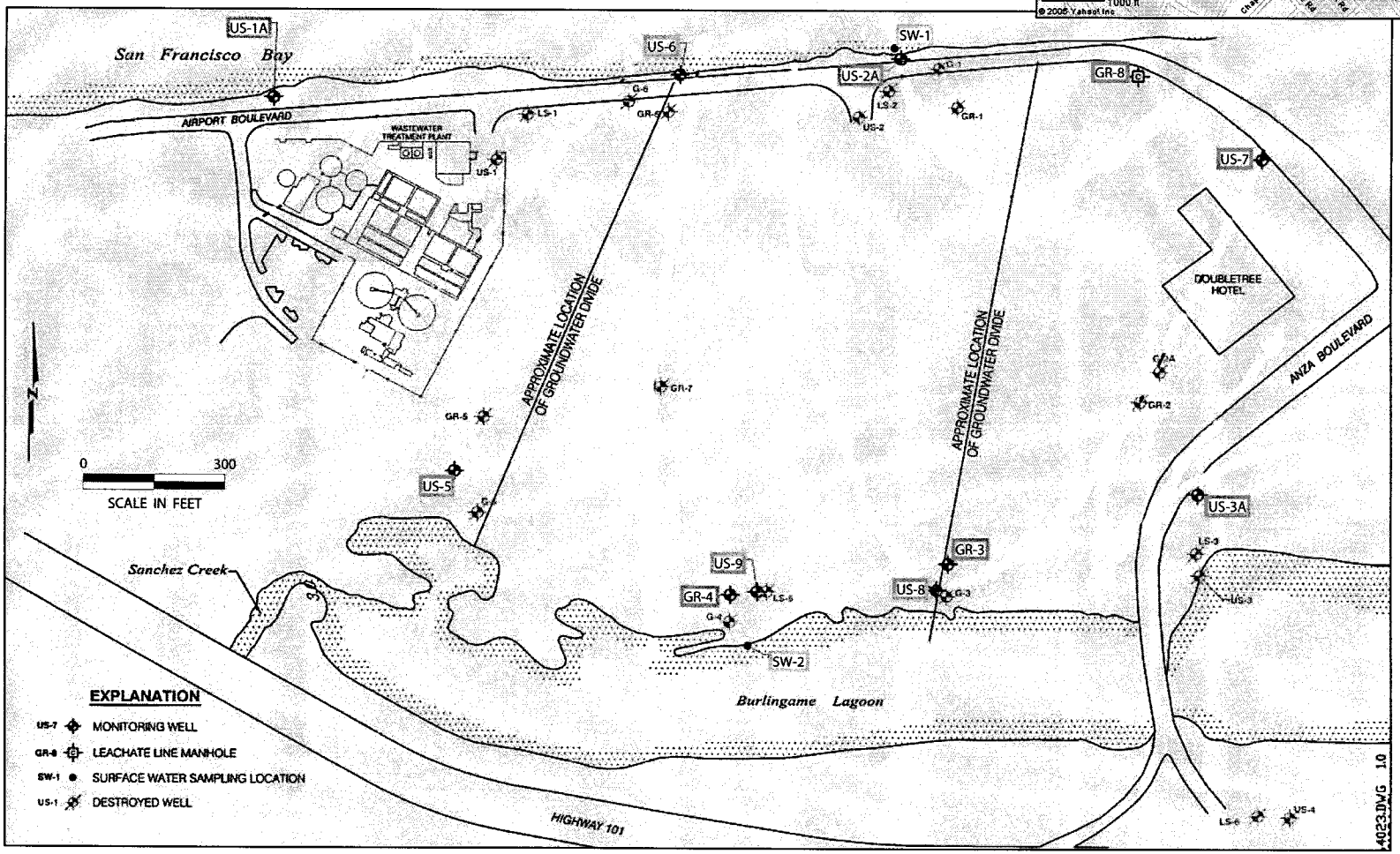
Figure 4, Cap Cross Sections for Lower Deck Area

Table 1, Original Self Monitoring Program

Table 2, Revised Self Monitoring Program

FIGURE 1. Site Plan Illustrating Monitoring Locations.
(Figure based on Mactec Fourth Quarter 2004 Monitoring Report "Site Plan")





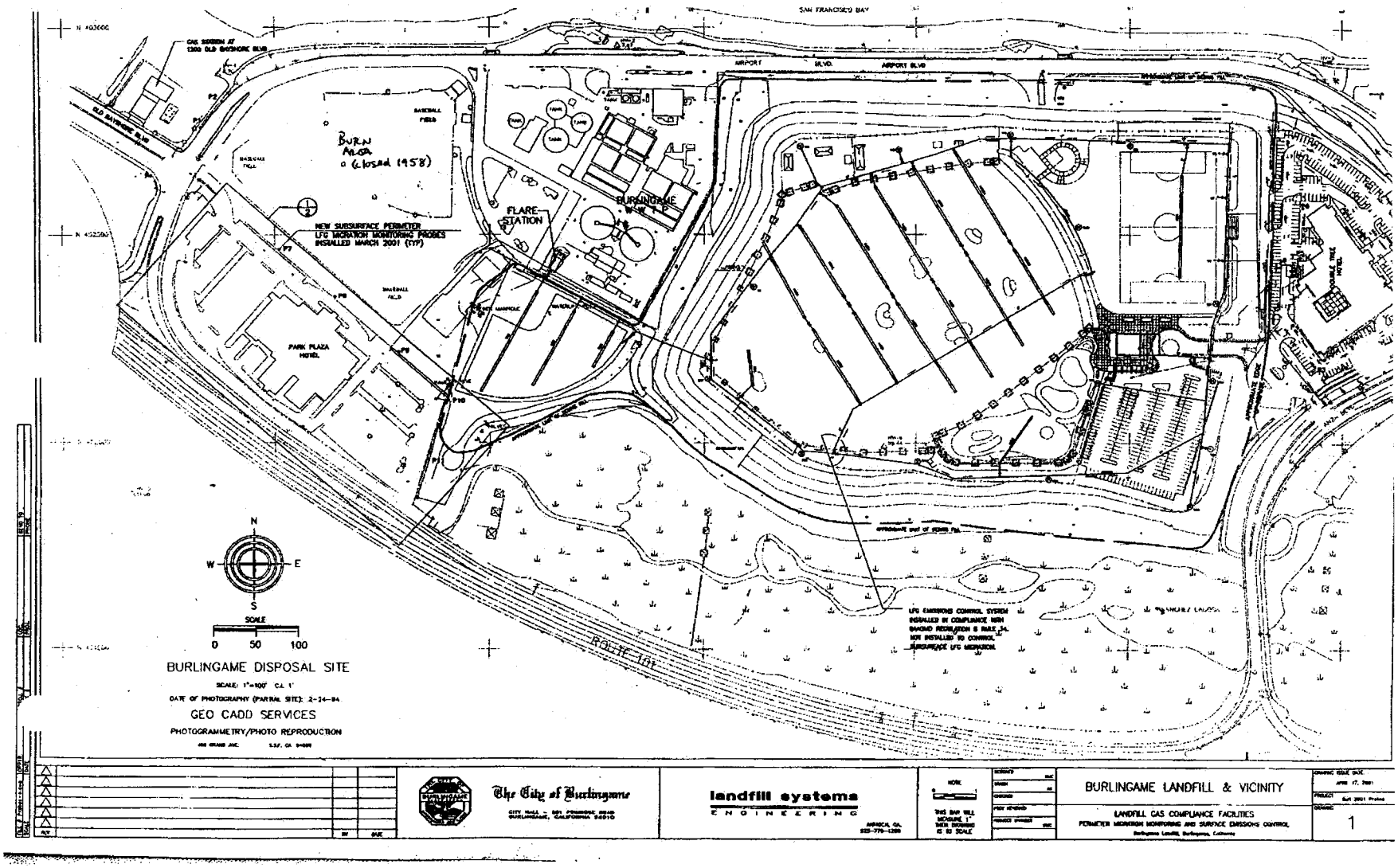


FIGURE 2. Site Plan Illustrating Recreational Facilities and Approximate Waste Boundary.
(The boundary is delineated with a solid line. Line breaks occur where the boundary line is unknown and approximated.)

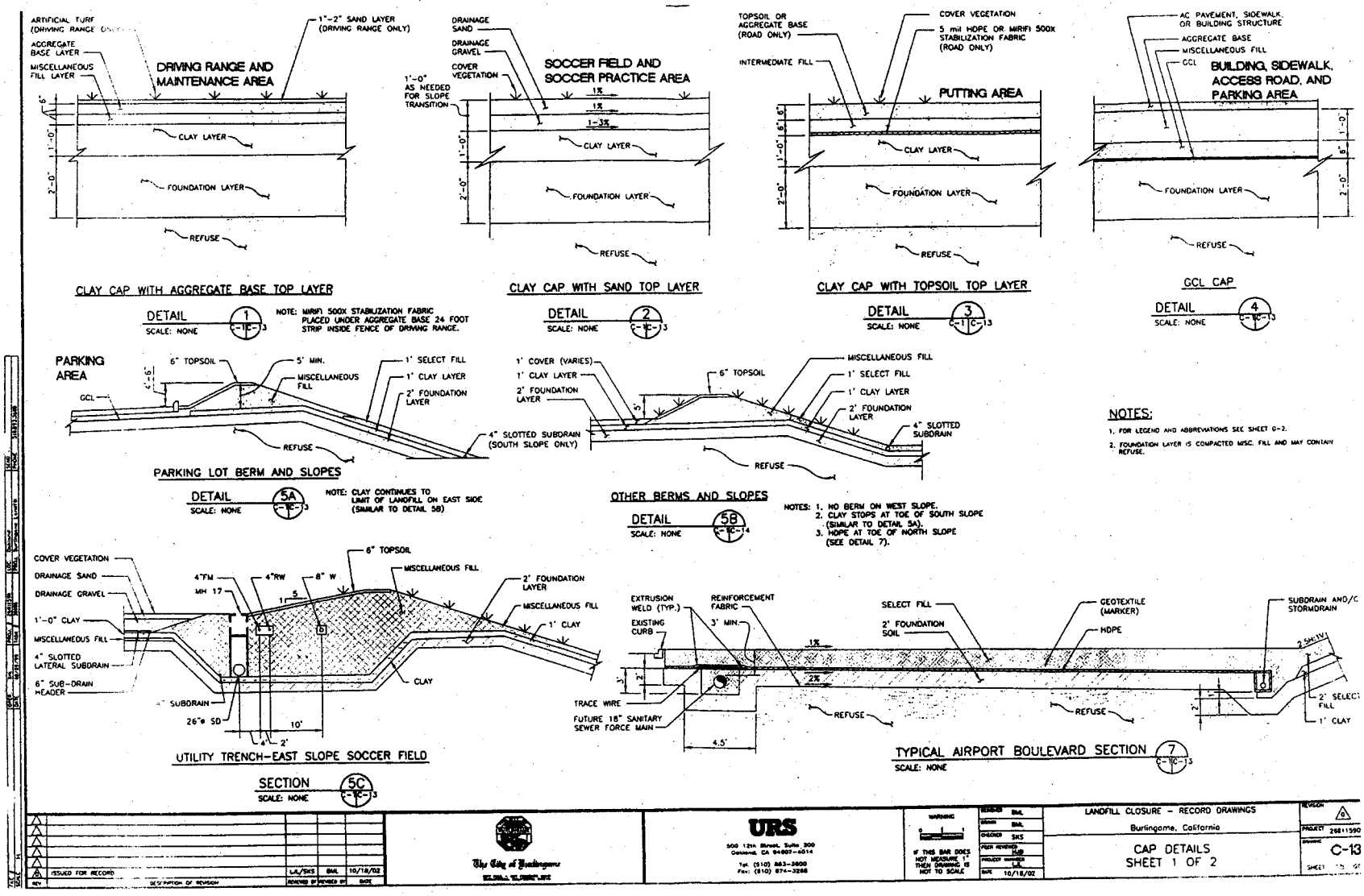


FIGURE 3. Cap cross sections for top deck areas.

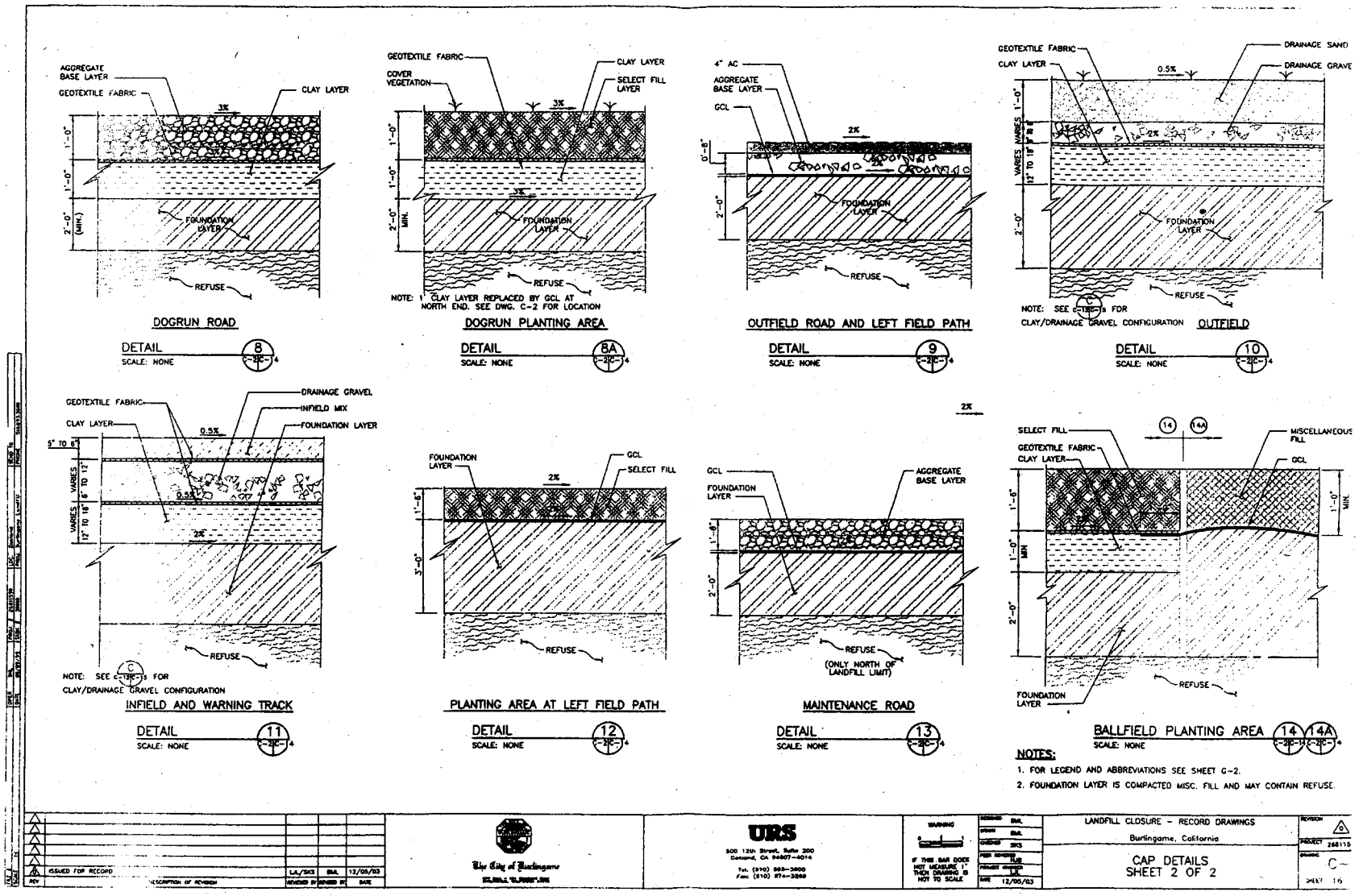


FIGURE 4. Cap cross sections for lower deck areas.

TABLE 1
ORIGINAL SELF MONITORING PROGRAM
(shaded parameters discontinued per previous Board approval)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Well No. (Area Monitored)	**GR-1**[5] (Leachate)	**GR-3** (Leachate)	**GR-4** (Leachate)	**US-1A** (Aquifer)	**US-2A** (Aquifer)	**US-3A** (Aquifer)	**US-5** (Aquifer)	**US-6** (Aquifer)	**US-7** (Aquifer)	**US-8** (Aquifer)	**US-9** (Aquifer)	**SW-1** (Surface Water)	**SW-2** (Surface Water)
2	**Leachate Level** (Field)	A	A	A	--	--	--	--	--	--	--	--	--	--
3	**Water Level** (Field)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	--	--
4	**Temperature** (Field)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
5	**Electrical Cond.**[2] (Field)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
6	**pH**[2] (Field)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
7	**Turbidity** (Field)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
8	**BOD**[4] (EPA 410.4)	--	--	--	--	--	--	--	--	--	--	--	Q	Q
9	**COD**[1,4] (EPA 410.2)	--	--	--	--	--	--	--	--	--	--	--	Q	Q
10	**TDS**[1,4] (EPA 160.1)	--	--	--	--	--	--	--	--	--	--	--	Q	Q
11	**TSS**[1,4] (EPA 160.2)	--	--	--	--	--	--	--	--	--	--	--	Q	Q
12	**TOC**[1] (EPA 415.5)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
13	**TKN**[1] (EPA 351.2)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
14	**Alkalinity**[1,4] (EPA 310.1)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
15	**Halogenated VOCs**[2] (EPA 8010 or 601)	A	A	A	A	A	A	A	A	A	A	A	A	A
16	**Aromatic VOCs**[2] (EPA 8020 or 602)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
		1	2	3	4	5	6	7	8	9	10	11	12	13
	Well No. (Area Monitored)	**GR-1**[5] (Leachate)	**GR-3** (Leachate)	**GR-4** (Leachate)	**US-1A** (Aquifer)	**US-2A** (Aquifer)	**US-3A** (Aquifer)	**US-5** (Aquifer)	**US-6** (Aquifer)	**US-7** (Aquifer)	**US-8** (Aquifer)	**US-9** (Aquifer)	**SW-1** (Surface Water)	**SW-2** (Surface Water)

17	**Chlorinated Herbicides**[2,3] (EPA 8150 w/ capillary column)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
18	**Antimony**[2,3] (EPA 6010)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
19	**Chromium (total)**[2,3] (EPA 6010)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
20	**Cobalt**[2,3] (EPA 6010)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
21	**Nickel**[2,3] (EPA 6010)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
22	**Silver**[2,3] (EPA 6010)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
23	**Zinc**[2,3] (EPA 6010)	A	A	A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
24	**Copper**[2,3] (EPA 6010)	A	A	A	A	A	A	A	A	A	A	A	A	A	A

Notes:

1. Methods for Chemical Analysis for Water and Wastes, EPA600/4/79, revised March 1983
2. EPA SW-846
3. Parameter Monitoring Discontinued based on September 18, 1996 Proposed Detection Monitoring Program, Burlingame Landfill
4. Parameter Monitoring Discontinued – no record of formal request or approval. Parameter reviewed in this amendment.
5. GR-1 leachate sampling well destroyed.

Combined Quarterly and Annual Report Submitted with Fourth Quarter Report on January 31st (per 1996 amendment)

Q = Quarterly Sampling (Feb, May, Aug, Nov)
A = Annual Sampling (May)
SA = Semi-annual Sampling
BOD = Biochemical Oxygen Demand
COD = Chemical Oxygen Demand
TSS = Total Suspended Solids
TDS = Total Dissolved Solids
TKN = Total Kjeldahl Nitrogen
VOCs = Volatile Organic Compounds

TABLE 2
REVISED SELF MONITORING PROGRAM

		1	2	3	4	5	6	7	8	9	10	11	12	13
	Well No. (Area Monitored)	**GR-3** (Leachate)	**GR-4**[1] (Leachate)	**GR-8**[1] (Leachate Manhole)	**US-1A** (Aquifer)	**US-2A** (Aquifer)	**US-3A** (Aquifer)	**US-5** (Aquifer)	**US-6** (Aquifer)	**US-7** (Aquifer)	**US-8** (Aquifer)	**US-9** (Aquifer)	**SW-1** (Surface Water)	**SW-2** (Surface Water)
1	**Leachate Level** (Field)	A	A	A	--	--	--	--	--	--	--	--	--	--
2	**Water Level** (Field)	A	A	--	SA	SA	SA	SA	SA	SA	SA	SA	--	--
3	**Temperature** (Field)	A	A	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
4	**Specific Cond.** (Field)	A	A	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
5	**pH** (Field)	A	A	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
6	**Turbidity** (Field)	A	A	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
7	**TOC** (EPA 415.5)	A	A	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
8	**TKN** (EPA 351.2)	A	A	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
9	**Halogenated VOCs** (EPA 8010 or 601)	A	A	--	A	A	A	A	A	A	A	A	A	A
10	**Aromatic VOCs** (EPA 8020 or 602)	A	A	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA

Notes:

1. Well Location and Name Changed From Original Self Monitoring Program

Combined Semiannual and Annual Report Submitted with Second Semiannual Report on April 1st

SA = Semi-annual Sampling (Feb and Aug)
A = Annual Sampling (Feb)

TOC = Total Organic Carbon
TKN = Total Kjeldahl Nitrogen
VOCs = Volatile Organic Compounds